

# **Release notes PxWeb 2022 v1**



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## What is new in PxWeb 2022 v1?

Here are some of the new features in PxWeb 2022 v1:

- Upgraded to .NET Framework 4.8. You need .NET Framework 4.8 installed on your server to run PxWeb 2022 v1.
- Screen reader improvements
- Administration API
- Creation of DCAT-AP file
- Pivoted versions of CSV file format in the PxWebApi

This document is a description of the features and bug fixes introduced with PxWeb 2022 v1.

An online demo of PxWeb 2022 v1 can be found at:

<http://pxwebdemo.scb.se/>

More information about PxWeb can be found at:

<https://www.scb.se/en/px-web/>

## User interface

The following improvements and fixes has been made to the user interface. The #xxx numbers represents the related issues that has been reported on Github:

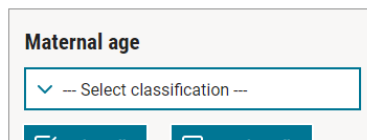
<https://github.com/statisticssweden/PxWeb/issues>

### Screen reader improvements

A number of improvements have been made to make PxWeb work better with screen readers. This helps people who have difficulties seeing to access and interact with PxWeb content.

### Restore variable values #209

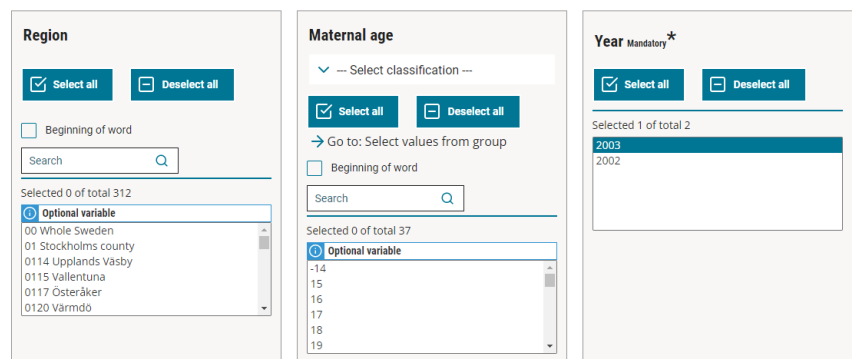
After selecting aggregation or valueset on the page where you select variable and values it is now to restore the variable values by selecting "--- Select classification ---" option in the dropdown list.



**Note:** This functionality does not work if you have made the selection configuration "Valueset must be selected first" in the administration tool.

### Compact view by default #218

On the selection page where you select variables and values, the compact view where the variable selection boxes are displayed side by side, is now the default view.



### Mandatory variables are displayed first #164

On the selection page where you select variables and values, the variable order will be sorted so that content, time and mandatory variables (variables where selection must be made) are displayed first. This setting only works for CNMM databases.

It is possible to switch this functionality on or off by use of the "Sort variable order" selection setting in the administration tool.

### Clickable logotype #197

The PxWeb logo has been made clickable. By default you will return to the start page of PxWeb when you click the logo. If you however has configured a homepage in your database.config file, clicking the logo will take you to the configured homepage url:

```
<homePages>
  <homePage>
    <language>en</language>
    <url>https://www.yourhomepage.com/</url>
    <isExternal>True</isExternal>
  </homePage>
</homePages>
```

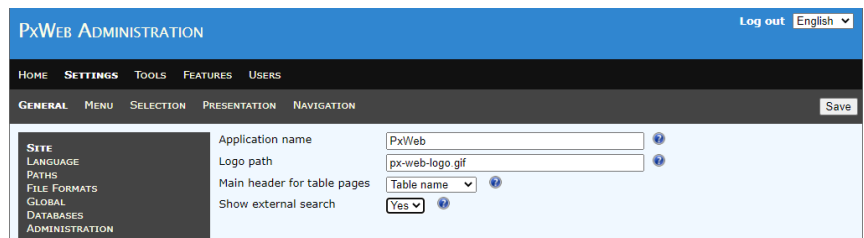
### Link to external search #195

It is possible to display a link to an external search page in the head of PxWeb:



To do this you need to do two things.

1. Configure PxWeb to show the external search link in the administration tool:

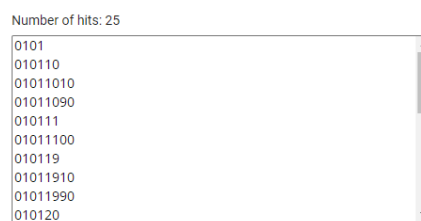


Edit the sentence "PxWebExternalSearchURL" in your language files with the URL you want to be redirected to when the search link is clicked:

```
<sentence name="PxWebExternalSearchURL" value="https://www.mysite.com/mysearchpage"/>
```

### Always display code and text in advanced value search #222

If a variable has presentation mode code, the search result in the advanced value search can be a bit hard to understand:



Therefore a new setting has been added in the administration tool (Settings --> Selection --> Always show code and text in search result) where you can configure to always display code and text in the search result:

Number of hits: 25

0101 horses, asses, mules and hinnies, live

010110 Pure-bred breeding horses and asses

01011010 Pure-bred breeding horses

01011090 Pure-bred breeding asses

010111 horses, live, purebred breeding

01011100 Pure-bred breeding horses

010119 horses, live, except purebred breeding animals

01011910 Horses for slaughter

01011990 Horses (excl. those pure bred for breeding and for slaughter)

010120 asses, mules and hinnies, live

### Text for file format shortcut buttons #162

In PxWeb 2022 v1 the file format text is now displayed for file format shortcut buttons. For the Excel shortcut button an icon has also been added:



		Population
		2018
01 Stockholm county	2 years	30,051
	3 years	29,764
0114 Upplands Väsby	2 years	602
	3 years	613

### Possible to change text for footnote label Obs: #185 #235

In earlier versions of PxWeb the Obs: label was displayed for mandatory footnotes. It was not possible to change this text in the language files. Now you can do that.

	Men	Women
04 Södermanland county	132,907	134,617
05 Östergötland county	212,026	211,143
06 Jönköping county	167,218	168,028

**Obs:**

The tables show the conditions on December 31st for each respective year according to administrative subdivisions of January 1st of the following year

### Treeview scroll problem #187

The problem where expanded branches was not scrolled into view has been fixed.

### Copy URL for saved query does not work #130

When the PxWeb site did not use https it was not possible to copy the saved query URL to the clipboard. This has been fixed.

### Sorted table did not work in swedish #148

The sort view did not work when swedish language was selected due to a corrupted language file. This has been fixed.

### Height of variable selection boxes controlled by css

On the selection page where you select variables and values the height of the boxes are now controlled by css instead of javascript. A minimum use of height is used for selection boxes that are displayed side by side.

### Transparent backgrounds for charts #183

In PxWeb 2022 v1 it is possible to configure PxWeb to produce charts with transparent background. On the chart feature page in the administration tool there are two new settings "Background alpha" and "Chart background alpha" which controls the transparency of generated charts:

Background color	<input type="color"/>	<input type="text" value="#FFFFFF"/>	<a href="#">?</a>
Background alpha	<input type="text" value="5"/>	<a href="#">?</a>	
Gridline color	<input type="color"/>	<input type="text" value="#b3b3b3"/>	<a href="#">?</a>
Background color chart	<input type="color"/>	<input type="text" value="#eeeeee"/>	<a href="#">?</a>
Chart background alpha	<input type="text" value="5"/>	<a href="#">?</a>	
Frame color	<input type="color"/>	<input type="text" value="#030003"/>	<a href="#">?</a>

These settings shall have an integer value between 0 and 255, where 0 is completely transparent and 255 opaque.

**Note:** This setting only works for PNG charts. GIF and JPEG charts will still be opaque. If you configure your PxWeb to produce transparent charts this will affect all PNG charts.



## Create DCAT-AP file

DCAT-AP is specification for metadata records to meet the specific application needs of data portals in Europe.

This feature will create an DCAT-AP file representing your PxWeb database.

The file created can be imported by data portals in Europe. Once imported the data portals can display metadata about your tables and give end users an overview of which dataset exists and also give them the possibility to navigate to your PxWeb database through the data portal.

For more information about DCAT-AP see:

<https://joinup.ec.europa.eu/collection/semantic-interoperability-community-semic/solution/dcat-application-profile-data-portals-europe/about>

This feature is built using the DataportalXML component. For more information about the DataportalXML component see:

<https://github.com/statisticssweden/DataportalXML>

You can create DCAT-AP files for your PxWeb databases in the Administration tool under Tools --> Generate XML:

The screenshot shows the 'PxWeb ADMINISTRATION' interface. At the top, there's a navigation bar with 'HOME', 'SETTINGS', 'TOOLS', 'FEATURES', and 'USERS'. Below this is a sub-navigation bar with 'GENERATE DATABASE', 'LANGUAGE MANAGER', 'RESET', and 'GENERATE XML'. The 'GENERATE XML' option is selected. The form contains the following fields:

- Database type: PX (dropdown)
- Database: Example (dropdown)
- Base URI: https://baseURI.com/
- Catalog Title: Catalog title
- Catalog Description: Catalog description
- License: http://creativecommons.org/publicdomain/zero/1.0/
- Base API URL: https://baseAPI.com/
- Landing page base URL: https://baseLandingPage.com/
- Publisher: SCB

There is a 'Generate' button at the bottom of the form.

**BaseUri:** The base URI that's used within the XML-file does not need to be an existing URL. E.g. "https://www.baseURI.se/".

**CatalogTitle:** Title for the created catalog by the tool. E.g. "SCB tables".

**CatalogDescription:** The catalogs description and it can be repeated multiple times for different language versions of the same text.

**License:** License that the data is made available for. DCAT-AP-SE version 2.0.0 E.g. "http://creativecommons.org/publicdomain/zero/1.0/".

**BaseApiUrl:** Base URL for API-requests to a specific database. The final link will then be built out dynamically to {BaseApiUrl}/{Language}/{DBid}/{Path}. E.g. "http://api.scb.se/OV0104/v1/doris/" will for the table "BefolkningNy" result in the link: "http://api.scb.se/OV0104/v1/doris/sv/ssd/BE/BE0101/BE0101A/BefolkningNy".

**LandingPageUrl:** Base URL for start page to a specific database. The final link will then be built out dynamically to {BaseApiUrl}/{Språk}/{DBid}/{Tabell}. E.g. "http://www.statistikdatabasen.scb.se/goto/" the table "BefolkningNy" will result in the link:  
 "http://www.statistikdatabasen.scb.se/goto/sv/ssd/BefolkningNy".

**Publisher:** The name of the unit that is responsible for making the catalog available. E.g. "SCB".

### Mapping of themes

DCAT-AP-SE has a specific standard for the partitioning of databases into themes DCAT-AP-SE version 2.0.0. Other standards may be used and themes must therefore be converted. The theme codes can vary between different databases and thus the mapping of themes must vary for different databases. The mapping is read from a JSON-fil with key-value pairs describing how each code should be converted. An example of a valid JSON file:

```
{
  "AM": "SOCI",
  "BE": "SOCI",
  "ME": "JUST",
  "EN": "ENER",
  "FM": "ECON",
  "HA": "ECON",
  "HE": "ECON",
  "HS": "HEAL",
  "JO": "AGRI",
  "KU": "EDUC",
  "LE": "SOCI",
  "MI": "ENVI",
  "OE": "GOVE",
  "PR": "ECON",
  "TK": "TRAN",
  "UF": "EDUC"
}
```

The json-file under "/PxWeb/PxWeb/TMapping.json" will be used for theme mapping. If a PX database is used where TMapping.json exists in the root directory of the database, this file will be used instead. Example: If the PX database Example is used and "PxWeb\PXWeb\Resources\PX\Databases\Example\TMapping.json" does exist, this mapping will be used. If it does not exist the mapping "\PxWeb\PXWeb\TMapping.json" will be used instead.

When you click the "Generate" button a file named dcat-ap.xml will be created in the root folder of PxWeb. This file is a DCAT-AP description of your database using the settings above when generated.

## Administration API

An administrative API has been added to PxWeb. Through this API certain tasks can be performed by simply calling an API endpoint instead of logging into the Administration tool and do this manually. In this way certain tasks can be automated.

With the Administration API you can perform the following tasks:

1. Clear cache
2. Build menu.xml + search index
3. Create a DCAT-AP file representing your database

## Secure calls to the administration API

We do not want anyone to be able to make calls to the administration API so we need to protect these calls. This is done in two ways:

1. API key
2. IP address

### API Key

An API key must be configured for your PxWeb site and also be included as a header in calls to the administration API

The API key is configured in the *web.config* file as an appsetting. Example of *web.config* appsettings:

```
<add key="APIKey" value="foobar" />
```

If this key is not configured no calls to the administration API can be made.

To make a successful call to the administration API. The API call must include the header "APIKey" with the value "foobar".

### IP address

The administration API uses the same IP address filter as the Administration tool. To restrict access of the administration API to only the local server you should configure the allowed addresses in *settings.config*:

```
<administration>
  <useIPFilter>True</useIPFilter>
  <ipAddresses>
    <ipAddress>127.0.0.1</ipAddress>
    <ipAddress>::1</ipAddress>
  </ipAddresses>
</administration>
```

### Clear cache

Calling this API endpoint will clear the PxWeb cache. This is useful when some cached information is changed i.e. a batch job that creates new items that need to be visible in the API and in the UI immediately. The REST API allows a client to clear the cache items at once by performing a DELETE request.

Example request:

```
https://{pxweb_domain_name}/api/admin/v1/cache
```

HTTP Method: DELETE

Headers: APIKey: {API key value}

### **Build menu.xml + search index**

Calling this endpoint will rebuild the menu.xml file for the database targeted in the call. Also the search index will be rebuilt for that database.

Example request:

```
https://{pxweb_domain_name}/api/admin/v1/menu/{DBID}
```

HTTP Method: POST

Headers: APIKey: {API key value}

### **Create DCAT-AP file**

It is possible to create the DCAT-AP file also from the administration API.

For more information about parameters to the API call, see description of how to create the DCAT-AP file in the Administration tool.

Example request:

```
https://{pxweb_domain_name}/api/admin/v1/dcat/{DatabaseType}
/{DBID}?baseURI={baseURI}&catalogTitle={title}
&catalogDescription={description}&license={licenceUrl}
&baseApiUrl={baseApiUrl}&landingPageUrl={landingPageUrl}
&publisher={publisherName}&preferredLanguage={language}
&languages={languageX}&languages={languageY}&languages={lan
guageZ}
```

HTTP Method: POST

Headers: APIKey: {API key value}

## File formats

A number of changes have been to file formats and downloading files.

### CSV2 and CSV3 in the API #154 #119

Two new CSV formats for available for the API.

#### CSV2

The table is pivoted such that all variables are in the heading. All variables are placed on the first line and further every value is placed on its own line.

```
"region","sex","year","contents","07459: Population,"
"03 Oslo","Males","2020","Persons",346184
"03 Oslo","Males","2021","Persons",347650
"03 Oslo","Females","2020","Persons",347310
"03 Oslo","Females","2021","Persons",349360
```

#### CSV3

This format display variable name and codes instead of description and text. Changed header on the last column to show ID for the table instead of text.

```
"Region","Kjonn","Tid","ContentsCode","07459"
"03","1","2020","Personer1",346184
"03","1","2021","Personer1",347650
"03","2","2020","Personer1",347310
"03","2","2021","Personer1",349360
```

### Extra byte bug when downloading file #167

This fix was earlier released as a patch to PxWeb 2021 v1. This patch is now included in PxWeb 2022 v1.

### Excel without autoadjusting cell width

Auto adjustment of cell width has been removed when saving to Excel. The calculation of the width of each and every cell in the Excel file required an extremely high amount of computing power from the web server and therefore needed to be removed. Because of this manual adjustment of cell width in the Excel file might be needed from the user.

### Presentation form in json-stat

When saving to JSON-stat and JSON-stat2, information of the current (state of the variable when the file was saved) presentation form has been added to each variable. This information is given by the `show` property in an `extension` block included for each `dimension`:

```
"dimension": {
  "Sex": {
    "extension": {
      "show": "value"
    },
    "label": "sex",
```

`show` can have the following values:

`code` – Only code should be displayed

`value` – Only value (text) should be displayed

`code_value` – Both code and value should be displayed and the order should be the code and then the value text

`value_code` – Both code and value should be displayed and the order should be the value and then the code text

### VARIABLECODE in PX-file #78

When saving to PX-file, information about VARIABLECODE is now included in the file.

## Miscellaneous fixes

### Date problems #275 #220

Depending on server setup, some installations of PxWeb has experienced problems parsing dates. These problems are now solved.

### Doublequote characters removed

Doublequote characters in any PxWeb text, for example table title, variable value, footnote and so on, are replaced with singlequote characters.

If any PxWeb text should include doublequote characters problems will occur when saving to the PX-file format, therefore they are replaced with singlequote characters.

## Updates

### .NET Framework 4.8 #159

PxWeb 2022 v1 needs .NET Framework 4.8 to be installed on the web server.

### jQuery-UI

jQuery-UI has been upgraded to version 1.13.2.

### Oracle dataaccess

Updated from Oracle.DataManagedDataAccess.Core from 2.19.60 to 2.19.110.

This release contains among others a fix for oracle bug 32370414 : ENCOUNTER SEMAPHOREFULLEXCEPTION WHEN OPEN CONNECTIONS IN HEAYY LOAD.

## Improved security configuration

The default security configuration in PxWeb has been extended with two new headers and one of the headers from previous version has been changed.

### Security headers

Two headers have been added in the response to clients to improve the PxWeb security and the header Referrer-policy has been changed.

```
<configuration>
  <system.webServer>
    <httpProtocol>
      <customHeaders>
        <add name="Referrer-Policy" value="same-origin" />
        <add name="Cache-Control" value="no-cache,
          must-revalidate Pragma: no-cache Expires: 0"/>
        <add name="Strict-Transport-Security" value="max-age=31536000;
          includeSubDomains; preload"/>
      </customHeaders>
    </httpProtocol>
  </system.webServer>
</configuration>
```

### Control referrer information

This header control how much referrer information that will be included in requests. In PxWeb 2022 v1 the referrer policy has been changed to `same-origin`. This means that referrer information is only sent when scheme (http/https), port and host (domain) is the same. Only on our own site in other words.

### Control cache information

The HTTP cache stores a response associated with a request and reuses the stored response for subsequent requests. You can manage caches through `Cache-Control.No-cache` avoid reuse of responses without revalidation. The `must-revalidate` directive indicates that the response can be stored in caches and can be reused while fresh. The value of `expires` specifies the lifetime of the cache. For compatibility with HTTP/1.0 clients `Pragma:no-cache` is used

### Strict-Transport-security information

The strict transport security header informs the browser that the site should only be accessed using HTTPS. `Max-age` the time, in seconds, that the browser should remember that a site is only to be accessed using HTTPS. The `includeSubDomains` directive means that this rule applies to all of the site's subdomains as well. `Max-age` is suffixed with `preload`, which is necessary for inclusion in all major web browsers' HSTS preload lists.



## For developers

### Own config files

There are two sets of/folders with configfiles: "TheAzureConfigFiles" which is used by a Github action deploying to azure (see below) and "TemplateConfigFiles" which is used for the other things.

### Automatical builds on Github

Github actions on statisticssweden/PXWeb:

- After every Push, the action MSBuild is automatically run. It just makes sure the code builds.
- The action "Deploy any selected branch to PxWebMaster at Azure" is for manual use, and lets you build the code to azure. This uses the config files in the folder called "TheAzureConfigFiles"

### Fewer and bigger nugets/repos #163

The c# serializers (jsonstat, excel and more) have been moved into PCAxis.Serializers.

PCAxis.Common and PCAxis.Px.Core have moved into PCAxis.Core

### Automated nuget creation on PX-component release

When a github release is made for any of the PX-components a nuget is automatically created and uploaded to nuget.org.

## **Known issues**

There are some known issues regarding PxWeb. You can read about these issues on github:

<https://github.com/statisticssweden/PxWeb/issues>

This is also the place where you report PxWeb bugs and problems.